



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

LIST OF THE BIRDS OF LOUISIANA.

BY GEO. E. BEYER, ANDREW ALLISON, AND H. H. KOPMAN.

Part II. — PRELIMINARY SKETCH, CONCLUDED.

(Continued from p. 15.)

THE survey of the topographical aspect of Louisiana bird life having been offered in the preceding pages, the introductory matter will now be concluded by presenting the seasonal phases of the avifauna of Louisiana, especially of the southern part of the State.

The main features in the seasonal history of Louisiana bird life will be correctly conjectured from a general knowledge of the breeding and winter ranges of the birds of eastern North America, but there are several peculiar considerations of interest. Preëminent among these are the preponderance of aliens throughout the usually mild winters, the great length of the semivernal period preceding the full course of spring, and the extent of the season of fall migration.

The succession of changes in the status of bird habitation in Louisiana is no less marked than in much more northern regions. Conditions in winter furnish a very convincing proof of this statement. Meteorologically, it is true, the Louisiana winter, especially in the southern part of the State, usually lacks the prime essentials of the season; but speaking from a faunal and floral standpoint, the season is unequivocal. Except for live and water oaks, and pines — the universal evergreens — the arboreal growths are leafless for at least a part of the time intervening between the nominal limits of winter. In many localities the amount of evergreen shrubs is insignificant, and few herbs are perennial. Insect and reptile life is correspondingly dormant. Among the Passeres and nearest allies, the preponderance of winter visitor forms over residents is highly significant. As links between summer and winter bird life, there are practically no forms except a few of the Picidæ and Icteridæ, *Cardinalis*, *Lanius*, *Dendroica vigorsii*, *Geothlypis trichas*, *Parus*, and *Sialia sialis*.

Biotic conditions, especially floral conditions, to be noted in southern Louisiana the first of the year are somewhat perplexing. In point of defoliation and imminence of cold, the winter is just becoming installed, and yet many prevernal indications are to be detected before the middle of the month. Maples and cypresses begin to bloom in the earlier part of the month in the latitude of New Orleans. Tree-toads and even frogs become very vocal if rains come without cold. Very balmy weather frequently occurs within the first week of January. Occasional butterflies, especially *Pyrameis atlanta* and *Callidryas eubule*, possibly hibernants in some cases, but doubtless individuals fresh from the pupæ in many instances, are more apt to be met with than during several weeks past. A few Myrtle Warblers are often in obvious transient progress before the 10th of the month. Yet the ranks of many winter birds are only lately well filled. Robins have about reached their maximum abundance, which they maintain for fully a month longer. Wintering blackbirds, sparrows, kinglets, and Hermit Thrushes do not give the slightest indication of dispersion. The Orange-crowned Warbler, however, which arrives in southeast Louisiana in greatest abundance about the middle of December, is nearing the limit of the time of its greatest abundance in that region. In a normal season it has become inconspicuous by January 20. And this, in fact, is often a decisive date in the season. A second mild spell in January may be expected then, bringing very likely fresh advances of transient Myrtle Warblers, putting the willows into very early leaf, and the elm into bloom, and starting the first flowering of the peach and plum. In pine regions, *Cratægus æstivalis* and possibly one or two other species of *Cratægus* will bloom as early as this, while *Alnus* and *Juniperus* are in flower at least by this time. But the great body of winter bird life, excepting some of the water birds of the lower orders, especially the Anatidæ, is as yet unaffected. Three weeks to a month of weather apt to include a severe freezing spell, are yet ahead. In most respects the growth of the new season is extremely circumspect. Numerous and constant lesser indications of spring are in evidence, and yet substantial vernal progress is extremely slow.

The first few days of February are often notable for rather high temperatures and the appearance of more Tree Swallows than are

commonly to be seen during the winter. A mild spell the latter part of January brings probably the first individuals of this species that have wintered extralimittally. On rather rare occasions the first Purple Martin appears in the earliest days of February. Its arrival is the first prominent incident of migration. Usually however, it does not appear, or is not seen, until the middle of February or even subsequent dates in that month. Its movements are sometimes much upset by very heavy freezes that visit even the southernmost part of the State, as on February 9-16, 1895 (with 10½ inches of snow at New Orleans) and February 13, 1899 (with a min. temp. of 7 degrees at New Orleans). Heavy freezes have not occurred within recent years, if at all, later than February 17. By February 20, the aspect of spring is usually very pronounced in the lowland woods of southeast Louisiana. Flocks of transient Myrtle Warblers are now conspicuous. Robins are beginning to show some decrease; transient Catbirds appear occasionally; in an exceedingly mild and early season, 1893, several Parula Warblers were observed on February 22, but this date is rather extraordinary by comparison with normal dates of arrival. The cypress and late willows leaf out at this time. Cardinals, Tufted Titmice, Mockingbirds, and Carolina Chickadees begin to sing vigorously. After this there is small probability of the season's receiving further set-backs.

The first completely vernal weather, all factors considered, comes usually by the 3d or 4th of March. Weather of this kind is established but a day or two before the certain arrival of the Parula and Sycamore Warblers. The first extensive flights of Limicolæ, especially *Tringa maculata*, *Totanus*, and *Bartramia*, reach the coast districts of Louisiana. Yet the migrations are not given very decided impulses for some time longer. The number of migrants in the first half of March seems by no means commensurate with the prevailing temperatures and the rapid growth of plants. Migrational activity during this period is usually most noticeable about March 10. Purple Martins, which become generally distributed, though not common, about March 1, now appear in considerable numbers. Parula Warblers grow common. Night Herons and Little Blue Herons begin to arrive. In a normal season the first Hooded Warbler appears.

Usually a third distinct warm period sets in at the latitude of New

Orleans by March 15 or from one to three days later. Sometimes a delayed second warm period takes its place; so that from March 12 or 13 to March 18 there is almost invariably a period of considerable migration. The regular arrivals are the Prothonotary Warbler, the Blue-gray Gnatcatcher, the Chimney Swift, and the Red-eyed Vireo, though the last is frequently not seen until the next 'wave.' Herons and the Limicolæ increase. White-eyed Vireos become decidedly common, the first individuals that winter extralimittally arriving early in March. Hooded Warblers become rather common, and Parulas increase very decidedly. The bulk of the Robins have left by the beginning of this period, and Golden-crowned Kinglets are not much observed thereafter. Yellow-bellied Woodpeckers grow scarce, and the last Orange-crowned Warbler is seen.

Periods of migration follow each other in rather rapid succession from this time on. There are often three separate 'waves' between March 20 and April 1 at the latitude of New Orleans. Characteristic of the first 'wave', occurring about March 22, is the Orchard Oriole, though the number of individuals is always small so early. The Red-eyed Vireo is a certain arrival at this time, and the Kingbird may be expected. The advance of Tree Swallows becomes general. Prothonotary Warblers are apt to be fairly common for the first time. Hooded Warblers become exceedingly plentiful. The appearance of the first Ruby-throated Hummingbirds ceases to be casual. Gnatcatchers become common. Herons and various species of Limicolæ, especially *Totanus solitarius*, arrive in large numbers. If a second wave follows this in a few days, it is not generally notable except for an increase of most of the kinds, lately arrived. The last 'wave' in March, commonly occurring from March 29 to March 31, is a very important one. Regular arrivals at this time are the Crested Flycatcher, the Indigo Bunting, the Barn Swallow, the Yellow-throated Vireo, the Kentucky Warbler, and the Wood Thrush. Occasionally some of these arrive with the preceding wave. Hummingbirds now become common. Of more uncertain occurrence are the Wood Pewee, the Green-crested Flycatcher, the Summer Tanager, the Warbling Vireo, Swainson's Warbler, and the Yellow Warbler. The last Robins are seen ordinarily at this time; Ruby-crowned Kinglets are common for the last time, and

in song for the first time; Myrtle Warblers are in song also, having begun about a week earlier. White-throated Sparrows are beginning to decrease, though Swamp Sparrows remain plentiful, and the number of Savanna Sparrows is not appreciably affected. Late transient Palm Warblers appear; sometimes they are in song.

Excepting those species whose arrival during the preceding wave is doubtful, a warm spell about April 4 brings few new species, but generally a great abundance of the common kinds arriving during the preceding period. The Yellow-billed Cuckoo is frequently an exception to this rule. Transient Thrashers and Catbirds are present. The first females and the bulk of males of the Orchard Oriole arrive. The bulk of Tree Swallows arrive. The Black-and-white Warbler, the Cerulean Warbler, the Ovenbird, and the Redstart, species not much met with in southeast Louisiana in spring, are perhaps most apt to be seen at this time. Phœbes and Ruby-crowned Kinglets depart. Myrtle Warblers decrease rapidly.

Decidedly summery weather, sometimes sharply separated from the preceding period by a fresher spell, is usual by April 10 or 12. When the Yellow-billed Cuckoo has not appeared earlier, it is practically certain to be seen by this time. The Nighthawk arrives, and in pine regions, the Chuck-will's-widow. An important arrival in the fertile alluvial regions of southeast Louisiana is the Yellow-breasted Chat.

Subsequent to this time, warm and summery weather prevails, and diurnal migrational activity is not obvious *except when the weather freshens*. From two to three of these cooler periods are likely to occur in the last half of April. Usually the most marked is that occurring on or about April 20. Notable species forming the 'waves' at this time are the Baltimore Oriole, the Scarlet Tanager, the Rose-breasted Grosbeak, the rarer thrushes, and the late transient warblers, especially of the genus *Dendroica*. (See Kopman, *Auk*, Jan., 1904, pp. 45-50.) The maximum abundance of Barn Swallows is reached at this time, and the first Black-throated Buntings are seen.

Sometimes in place of the diurnal appearance of migrants after April 20, and sometimes in connection with it, occur exceedingly heavy nocturnal flights on hot nights with electric storms.

As far as transients are concerned the sequence of migrational

events in southern Louisiana is of much greater uncertainty towards the end of the season than earlier. Several species, however, show great consistency in their movements at this season, and this is particularly true of departing winter visitors. The White-throated Sparrow and Myrtle Warbler nearly always depart between April 22 and April 27. The House Wren departs a week to ten days earlier as a rule. The Rusty Blackbird, Savanna Sparrow, Swamp Sparrow, and American Pipit leave in the first week of May. The departure of these species marks the practical conclusion of the spring migration. The Bobolink, the Rose-breasted Grosbeak, and late warblers and thrushes, lingering sometimes for a day or two of warm weather after a fresh spell about May 1, will depart suddenly in a body. The Redstart and Bay-breasted Warbler, however, have been seen as late as the middle of May, and the Wilson's Thrush and Catbird have been noted at New Orleans equally late.

Although the nesting period in southern Louisiana represents almost the extreme extension of the breeding season in the United States, there are only two months, from about May 15 to about July 15, when other phases of bird life are not mingled with it. By the latter date, Yellow Warblers are beginning to move into southern Louisiana, from which they are absent as nesters. With them, or closely following them, come Black-and-white Warblers, and occasionally the Cerulean Warbler. Considerable flights of *Tringa maculata*, *Totanus*, and *Bartramia* reach the coast by July 15 or 20. Though the hottest part of the summer is beginning, the nights and early mornings are frequently fresher with light northerlies. By July 25 these conditions are often pronounced, so that the number of Yellow Warblers increases rapidly, Black-and-white Warblers become fairly common, and even the first Redstarts arrive.

In connection with the brevity of the uninterrupted breeding season in Louisiana, the behavior of the Tree Swallow is interesting. While this species certainly does not breed in the southern section of the State, even assuming that it may breed elsewhere in Louisiana, it reappears near the coast by July 20 or earlier. As it may be observed at New Orleans in the spring sometimes as late as May 20, it is thus about the last species to leave, and one of the first to

return. The Barn Swallow reappears with great regularity in southern Louisiana during the first week of August, frequently on the 3d or 4th. By this time migrants have become decidedly numerous and very active. The Louisiana Water-thrush, a species that does not breed in the low coastal regions of Louisiana and Mississippi, appears fully this early. Redstarts grow common. A little later, as a rule, the Worm-eating Warbler, whose breeding range in Louisiana corresponds closely with that of the Louisiana Water-thrush, begins to arrive at the coast. Species with much more northern breeding ranges may also reach the Gulf Coast district before the middle of August. And yet the month from July 15 to August 15 is the most depressing of the heated term. After the 15th of August, day winds from the north are not uncommon, and a decidedly autumnal aspect in the weather is not infrequent during the next ten days. Kingbirds now appear in those sections of Louisiana where they are uncommon as nesters, and, in fact, become very much more abundant in all sections. Barn Swallows are even more plentiful than earlier in the month. Orchard Orioles, which are hardly common after August 1, now decrease very rapidly; Gnatcatchers are likewise rather scarce; in the pine districts the Chuck-will's-widow, and the Fork-tailed and Mississippi Kites disappear almost entirely. The last week in August is characterized by heavy rain storms and distinctly autumnal weather following. The first transient Maryland Yellow-throats now appear, while the full tide of Yellow Warbler travel is past. It is not unusual to find the first Traill's or Least Flycatchers, and transient Wood Pewees are leaving in considerable numbers. By this time or earlier, the first Bobolinks and Soras are found in the marshes of the southern part of the State, where Black Terns and continually increasing flocks of Limicolæ are assembling. Water-thrushes of both species are now very common. The transient movement of Summer Tanagers begins now, or even somewhat earlier.

While migratory movements are almost continuous from this time on, it is nearly the middle of September before any fresh arrivals are recorded in southeast Louisiana. The 15th of the month, however, is signalized by weather that is autumnal in almost every particular, and the full course of the fall migration is immediately under way. Characteristic arrivals are the Mag-

nolia, Chestnut-sided, and Blackburnian Warblers, and the Wilson's Thrush. About a week later, a much heavier 'wave' follows, bringing the first Olive-backed Thrushes, many Catbirds, Black-throated Green and Tennessee Warblers, and transient Indigo Buntings in large numbers. The Kingbird is not often seen after this period of migration. Apparently the only winter visitor to arrive with this 'wave' is the House Wren. But while the passage of transients continues unabated for several weeks yet, the coming of a considerable number of winter visitors is not delayed much longer. Savanna and Swamp Sparrows and the Phoebe arrive very early in October, if not before. White-throated Sparrows, Myrtle Warblers, Winter Wrens, and both Ruby-crowned and Golden-crowned Kinglets should be expected at New Orleans almost if not quite by October 15. The presence of these species, however, may not be obvious until the occurrence of considerably fresher weather about October 20. The American Pipit arrives within a few days later. The Red-eyed Vireo and Wood Thrush are now seen for the last time. Of transient warblers, the Black-and-white, the Bay-breasted, the Blackburnian, and the Chestnut-sided, are seldom seen later than October 15, while the Worm-eating and Yellow Warblers always depart by that date. But important waves of the Black-throated Green Warblers may occur after October 20, while the Parula, Tennessee, Magnolia, and Hooded Warblers, and the Redstart remain until November 1 or later, which is also the time of departure of the Yellow-billed Cuckoo, Nighthawk, Chimney Swift, Ruby-throated Hummingbird, and Wood Pewee.

After the last transients have left there are but few winter visitors to arrive. The Robin, however, is a species of which little is seen until about the middle of November, and Rusty Blackbirds scarcely arrive earlier than that. The Goldfinch, however, has generally come to southern Louisiana by November 15, and the Orange-crowned Warbler by November 20. With White-throated Sparrows arrived in their full numbers, and with the first decidedly cold weather commonly occurring about this date, the status of winter bird life is practically complete, though Robins, Blackbirds, and occasionally a few other species show continued increase until after Christmas.

(*To be continued.*)